UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,065	09/26/2001	Imre Kovesdi	212357	1431

23460 7590 12/06/2002

LEYDIG VOIT & MAYER, LTD
TWO PRUDENTIAL PLAZA, SUITE 4900
180 NORTH STETSON AVENUE
CHICAGO, IL 60601-6780

EXAMINER
PRIEBE, SCOTT DAVID

ART UNIT	PAPER NUMBER
1632	16

DATE MAILED: 12/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
09/964,065	Kovesdi et al.
Examiner	**Art Unit**
Scott D. Priebe, Ph.D.	1632

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Nov 22, 2002* .

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *44 and 48-72* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *44 and 48-72* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
4) ☒ Interview Summary (PTO-413) Paper No(s). 12
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/22/02 has been entered.

The amendment filed 10/22/02 has been entered. Claim 48 has been amended, and claims 49-52 have been added. The amendment filed 11/2/02 has been entered. Claims 53-72 have been added.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 53-61 and 63-71 are rejected under 35 U.S.C. 101 because the invention is inoperative for practice with 293 cells.

The claims are directed in part to a system comprising a 293 cell line, which comprises complementing adenoviral coding sequences of one or more E1 gene products, and an adenoviral vector deficient in one or more E1 gene functions, "wherein there is no overlap" between the adenoviral sequences of the vector and cell line. This cannot be done. 293 cells comprise the left end of the Ad5 genome from the ITR to past the E1 region. The vector must retain the ITR and packaging sequence at a minimum in order to be a vector. Consequently, there must be overlap between the adenoviral sequences of the 293 cell and the vector.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 48 and 50-52 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 48 has been amended to recite that "all of ... the E1 region ... is deleted." The term "eliminated" here is considered to mean removed or deleted, and claim 50 requires this feature. Applicant points to page 11, lines 26-31; page 13, lines 4-7 and page 24, line 23 to page 25, line 23 for support. However, these parts of the specification do not teach, either implicitly or

explicitly, the deletion of all of the E1 region, which includes not only the coding sequence for the E1A and E1B proteins, but also the E1A enhancer, E1A promoter, E1B/pIX poly A sequence, and the pIX promoter and coding sequence (the pIX gene is completely contained within the E1B region and shares the same poly A sequence as E1B transcription). Furthermore, the E1A enhancer region of the E1 region cannot be eliminated without also eliminating the packaging sequence which is completely contained within the E1A region (see Grable et al., J. Virol. 64 (5): 2047-2056, especially Figs. 1 & 2, page 2048). Removal of the packaging sequence would prevent any of the adenoviral vector genome from being packaged into virions. The specification does not disclose making or using adenoviral vectors which cannot be packaged into virions.

The rejection would be overcome by amending the claims to recite that all essential gene functions of the E1 region were deficient, rather than that the "all of ... the E1 region" was deleted.

Claims 53-61 and 63-71 rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are directed in part to a system comprising a 293 cell line, which comprises complementing adenoviral coding sequences of one or more E1 gene products, and an adenoviral vector deficient in at least E1 gene functions, "wherein there is no overlap" between the

adenoviral sequences of the vector and cell line. This cannot be done, as discussed above. Applicant has not indicated where the specification teaches using 293 cells for the narrower embodiment of there being "no overlap" between the cell and vector adenoviral sequences. There is no explicit teaching for the concept of "no overlap", as opposed to simply insufficient overlap to mediate recombination, or to use A549 cells, Example 11, to achieve it. However, the concept of no overlap is a logical extension of insufficient overlap, and the only cell line disclosed which could be used for achieving it is A549 (Example 11). Non-overlap cannot be accomplished with a 293 cell and an adenoviral vector that has at least an E1 deletion.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 48 remains and claims 49 and 51-60, 62-70 and 72 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 4, 7, 9-11, 14, 17, 19, and 22-24 of U.S. Patent No. 5,994,106.

Claims 48, 49, 51 and 52 are rejected for the reasons of record set forth in the Office action of 2/27/02. Claims 51 and 52 include the limitation that all or part of E3 are deleted. However, partial or complete deletion of the E3 region is well known in the art, generally where additional cloning capacity is required given the size constraint of a packagable adenoviral genome.

Although the conflicting claims 52-60, 62-70 and 72 are not identical, they are not patentably distinct from each other because the difference in scope between the instant claims and those of the '106 patent is that A549 cells are used and "no overlap"is not explicitly recited in the patent claims. There is no explicit teaching for the concept of "no overlap", as opposed to simply insufficient overlap to mediate recombination as recited in the '922 claims, or to use A549 cells, Example 11, to achieve it. However, the concept of no overlap is a logical extension of insufficient overlap, and the only cell line disclosed which could be used for achieving it is A549 (Example 11), i.e. 293 cells could not be used. With respect to the cell having E4 ORF6 and no other E4 ORF, when the '106 claims are read in light of the specification which describes 293 cell lines, they implicitly embrace 293 cells comprising E4 ORF6, and no other E4 ORF, particularly since it was known that ORF6 alone was sufficient to complement an E4 deletion.

Claim 48 remains rejected and claims 49, 50-60, 62-70 and 72 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-10 of U.S. Patent No. 6,482,616.

Claim 48 and new claims 49 and 50-52 are rejected for the reasons of record set forth in the provisional rejection over then application 09/321,797, which has since issued as the '616 patent. Claims 51 and 52 include the limitation that all or part of E3 are deleted. However, partial or complete deletion of the E3 region is well known in the art, generally where additional cloning capacity is required given the size constraint of a packagable adenoviral genome.

Although the conflicting claims 52-60, 62-70 and 72 are not identical, they are not patentably distinct from each other because the only difference in scope between the instant claims and those of the '616 patent is that A549 cells are not explicitly recited in the patent claims. However, when reading the patent claims in light of its specification, the only cell line disclosed that could be used to make a system where there is no overlap is an A549 cell line, e.g. Example 11

The following are provisional obviousness-type double patenting rejections because the conflicting claims have not in fact been patented. However, the '416 application has been allowed and is currently involved in interference proceedings.

Claims 44 and 48 remain and claims 49 and 50-52 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over

claims 19, 20-26, 36-40, 43-56, 62-71, 76-95 of copending Application No. 08/258,416 for the reasons of record set forth in the Office action of 2/27/02. Claims 51 and 52 include the limitation that all or part of E3 are deleted. However, partial or complete deletion of the E3 region is well known in the art, generally where additional cloning capacity is required given the size constraint of a packagable adenoviral genome.

Claim 48 remains and claims 49-72 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 36-38, 49, 51-54, 68-70, 72-76, and 109-114 of copending Application No. 09/261,922.

Claim 48 and new claims 49 and 50-52 are rejected for the reasons of record set forth in the Office action of 2/27/02. Claims 51 and 52 include the limitation that all or part of E3 are deleted. However, partial or complete deletion of the E3 region is well known in the art, generally where additional cloning capacity is required given the size constraint of a packagable adenoviral genome.

Although the conflicting claims 52-72 are not identical, they are not patentably distinct from each other because the only difference in scope between the instant claims and those of the '616 patent is that A549 cells are used and "no overlap"is not explicitly recited in the patent claims. There is no explicit teaching for the concept of "no overlap", as opposed to simply insufficient overlap to mediate recombination as recited in the '922 claims, or to use A549 cells, Example 11, to achieve it. However, the concept of no overlap is a logical extension of

insufficient overlap, and the only cell line disclosed which could be used for achieving it is A549 (Example 11), i.e. 293 cells could not be used.

Claim 48 remains and claims 49, 51 and 52 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 36, 39, 40, 42, 44- 46, 49, 50, 52, 54 and 55 of copending Application No. 09/934,207 for the reasons of record set forth in the Office action of 2/27/02. Claims 51 and 52 include the limitation that all or part of E3 are deleted. However, partial or complete deletion of the E3 region is well known in the art, generally where additional cloning capacity is required given the size constraint of a packagable adenoviral genome.

The terminal disclaimer filed on 10/17/02 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US 5,851,806 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Inventorship

In view of the papers filed 11/22/02, the inventorship of this nonprovisional application has been changed by the deletion of Duncan L. McVey and Alena Lizonova.

The application will be forwarded to the Office of Initial Patent Examination (OIPE) for issuance of a corrected filing receipt, and correction of the file jacket and USPTO PALM data to reflect the inventorship as corrected.

Certain papers related to this application may be submitted to Art Unit 1632 by facsimile transmission. The FAX numbers are (703) 308-4242 or (703) 305-3014 for any type of communication. In addition, FAX numbers for a computer server system using RightFAX are also available for communications before final rejection, (703) 872-9306, and for communications after final rejection, (703) 872-9307, which will generate a return receipt. The faxing of such papers must conform with the notices published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 CFR 1.6(d)). NOTE: If applicant *does* submit a paper by FAX, the original copy should be retained by applicant or applicant's representative. NO DUPLICATE COPIES SHOULD BE SUBMITTED, so as to avoid the processing of duplicate papers in the Office.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott D. Priebe whose telephone number is (703) 308-7310. The examiner can normally be reached on Monday through Friday from 8 AM to 4 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Reynolds, can be reached on (703) 305-4051.

Any inquiry concerning administrative, procedural or formal matters relating to this application should be directed to Patent Analyst Patsy Zimmerman whose telephone number is (703) 308-8338. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Scott D. Priebe

Scott D. Priebe, Ph.D.
Primary Examiner
Technology Center 1600
Art Unit 1632